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EXAMINER	
YANG, LINA	
ART UNIT	**PAPER NUMBER**
2665	

DATE MAILED: 09/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/966,304	RUMPH, DARRYL JONATHAN	
	Examiner	Art Unit	
	Lina Yang	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 September 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27/9/2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9/12/2002*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 1 is rejected under 35 U.S.C. 112, second paragraph.

Claim 1 recites the limitation "said searching information", in line 4. There is insufficient antecedent basis for those limitations in the claim.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-2, 4-21 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20 of

copending Application No. 10242151. Although the conflicting claims are not identical, they are not patentably distinct from each other.

Claim 1 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim1 of copending Application No. 10242151. An obvious-type double patenting rejection is appropriate where the conflicting claims are not identical, but an examed application claim is not patentable distinct from the reference claim because the examed claim is either anticipated by, or would have been obvious over, the reference claim. See, e.g., *In re Berg*, 104F.3d1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993). Although the conflict claims are not identical, they are not patentable distinct from each other. Claim 1 of current application and claim 1 of copending Application No. 10242151 are both directed to methods of search. The claims differ in that claim 1 of the current application does not teach the second step (b) in claim 1 of copending Application No. 10242151. Claim 1 can not be considered patentable distinct over claim 1 of copending Application No. 10242151 because it would have been obvious for one of ordinary skill in the art at the time when the invention was made to modify the claim 1 of copending Application No. 10242151 by omit the step to broaden the claimed invention.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim 9 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 8 of copending Application No. 10242151. An obvious-type double patenting rejection is appropriate where the conflicting claims are not identical, but an examed application claim is not patentable distinct from the reference claim because the examed claim is either anticipated by, or would have been obvious over, the reference claim. See, e.g., *In re Berg*, 104F.3d1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993). Although the conflict claims are not identical, they are not patentable distinct from each other. Claim 9 of current application and claim 8 of copending Application No. 10242151 are both directed to methods of determine the next packet to forward from one of a plurality of flow queues. The claims differ in that claim 9 of the current application does not teach the second step (c1) in claim 8 of copending Application No. 10242151. Claim 9 can not be considered patentable distinct over claim 8 of copending Application No. 10242151 because it would have been obvious for one of ordinary skill in the art at the time when the invention was made to modify the claim 8 of copending Application No. 10242151 by omit the step to broaden the claimed invention.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim 11 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 10 of copending

Application No. 10242151. An obvious-type double patenting rejection is appropriate where the conflicting claims are not identical, but an examed application claim is not patentable distinct from the reference claim because the examed claim is either anticipated by, or would have been obvious over, the reference claim. See, e.g., *In re Berg*, 104F.3d1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993). Although the conflict claims are not identical, they are not patentable distinct from each other. Claim 11 of current application and claim 10 of copending Application No. 10242151 are both directed to apparatuses. The claims differ in that claim 11 of the current application does not teach the p segment search engines having a first control input indicating a location whereat the segment search engine begins to search and a second control input indicating a location whereat the search ends in claim 10 of copending Application No. 10242151. Claim 11 can not be considered patentable distinct over claim 10 of copending Application No. 10242151 because it would have been obvious for one of ordinary skill in the art at the time when the invention was made to modify the claim 10 of copending Application No. 10242151 by omit the part to broaden the claimed invention.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim 15 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 14 of copending

Application No. 10242151. An obvious-type double patenting rejection is appropriate where the conflicting claims are not identical, but an examed application claim is not patentable distinct from the reference claim because the examed claim is either anticipated by, or would have been obvious over, the reference claim. See, e.g., *In re Berg*, 104F.3d1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993). Although the conflict claims are not identical, they are not patentable distinct from each other. Claim 15 of current application and claim 14 of copending Application No. 10242151 are both directed to devices. The claims differ in that claim 15 of the current application does not teach the p segment search engines having a first control input indicating a location whereat the segment search engine begins to search and a second control input indicating a location whereat the search ends in claim 14 of copending Application No. 10242151. Claim 15 can not be considered patentable distinct over claim 14 of copending Application No. 10242151 because it would have been obvious for one of ordinary skill in the art at the time when the invention was made to modify the claim 14 of copending Application No. 10242151 by omit the part to broaden the claimed invention.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim 18 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 17 of copending Application No. 10242151. An obvious-type double patenting rejection is appropriate

where the conflicting claims are not identical, but an examed application claim is not patentable distinct from the reference claim because the examed claim is either anticipated by, or would have been obvious over, the reference claim. See, e.g., *In re Berg*, 104F.3d1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993). Although the conflict claims are not identical, they are not patentable distinct from each other. Claim 18 of current application and claim 17 of copending Application No. 10242151 are both directed to methods for controlling the flow information packets within a communications device. The claims differ in that claim 18 of the current application does not teach the step (b1) in claim 17 of copending Application No. 10242151. Claim 18 can not be considered patentable distinct over claim 17 of copending Application No. 10242151 because it would have been obvious for one of ordinary skill in the art at the time when the invention was made to modify the claim 17 of copending Application No. 10242151 by omit the step to broaden the claimed invention.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim 20 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 19 of copending Application No. 10242151. An obvious-type double patenting rejection is appropriate where the conflicting claims are not identical, but an examed application claim is not patentable distinct from the reference claim because the examed claim is either

anticipated by, or would have been obvious over, the reference claim. See, e.g., *In re Berg*, 104F.3d1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993). Although the conflict claims are not identical, they are not patentable distinct from each other. Claim 20 of current application and claim 19 of copending Application No. 10242151 are both directed to programs. The claims differ in that claim 20 of the current application does not teach (a1) in claim 19 of copending Application No. 10242151. Claim 20 can not be considered patentable distinct over claim 19 of copending Application No. 10242151 because it would have been obvious for one of ordinary skill in the art at the time when the invention was made to modify the claim 19 of copending Application No. 10242151 by omit the part to broaden the claimed invention.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351 (a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-7, 9-10 and 18-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Chao et al. (U.S. Patent No. 6,370,144 B1).

Regarding claim 1, Chao teaches a search method comprising the steps of:

a) partitioning a search region into n segments (L levels, fig. 15; col. 21 lines 40-55), where n (L) is greater than 0;

b) searching each segment with a first predetermined algorithm (fig. 18 and the correspondent description on col. 23, fig. 25 and the correspondent description on col. 29 and 30).

c) for each segment, generating from said searching information indicating whether or not any indicator bit (validity bit, see fig. 14) set to a predetermined state ("1", see fig. 14) has been detected and the location of the indicator bit (Fig. 17, Fig. 18, fig. 25; and correspondent descriptions on col. 23, col. 24 and col. 29 and 30) ; and

d) using the information provided in step c) to select a winning location (Fig. 25, col. 30 lines 8-12).

Regarding claim 2, Chao further teaches performing a predetermined action on an entity associated with the winning location (col. 21, lines 39-41).

Regarding claim 3, Chao further teaches determining with a second algorithm a location in the segment from which searching starts (steps1820 and 1850 in fig. 18).

Regarding claim 4, Chao further teaches providing a pointer to identify the location whereat searching starts (1850 in fig. 18); and stepping the pointer sequentially to access a plurality of locations within the region (1850 in fig. 18); and testing indicator bit (validity bit) at each location to see if it is set in the predetermined state ("1"); and generating a control signal for the first location encountered with the indicator bit set to the predetermined state (1860 in gif. 18).

Regarding claim 5, Chao further teaches the search region includes a plurality of contiguous locations (fig. 14) to which information can be written or deleted and an indicator (validity bit) whose setting indicates information ("1") or no information ("0") at a selected location.

Regarding claim 6, Chao further teaches the information includes an identification number for at least one flow queue (Fig. 14, col. 21 lines 34-36).

Regarding claim 7, Chao further teaches the searches are executed simultaneously (fig. 18).

Regarding claim 9, Chao teaches a method to determine the next packet to forward from one of a plurality of flow queues comprising: (a) providing in a memory a search region (calendar) including a plurality of contiguous locations to which information can be written/deleted and an indicator whose state indicates the present or absent of information at a selected location (fig. 14); (b) partitioning said search region into n segments (fig. 15), wherein n is greater than 0; (c) determining a first location from which searching begins for each segment (steps1820 and 1850 in fig. 18); (d) searching each segment in accordance with a first predetermined algorithm (step 1850 in fig. 18).; (e) generating from each segment information indicating whether or not any indicator (validity bit) set to a predetermined state has been detected in said segment and location of detection (step 1860 in fig. 18); (f) determining the segment in which a valid indicator is most likely located (step 1860 in fig. 18); and (g) examining the information in (e) and (f) with a second predetermined algorithm to select a winner indicator and location (step 1870 in fig. 18, and Fig. 25, col. 30 lines 8-12).

Regarding claim 10, Chao further teaches to move a packet from a queue associated with the location in step g) (col. 17, lines 5-9).

Regarding claim 18, Chao teaches a method for controlling the flow of information packets within a communications device including the steps of: (a) partitioning a calendar into n segments (L levels fig. 15, col. 21 lines 40-55), wherein n

is greater than 0; (b) searching each segment with a segment search algorithm to identify at least one location with an indicator (validity bit) set to a first state ("1") (fig. 18 and the correspondent description on col. 23, fig. 25 and the correspondent description on col. 29 and 30); (c) examining with a top search algorithm locations detected in step (b); and (d) selecting one of the locations as a winning location (fig. 25, col. 30 lines 8-12).

Regarding claim 19, Chao further teaches determining a final winning location by concatenating an identification number for a winner segment containing the winning location to a value for the winning location within said winner segment; and forwarding a packet from a flow queue having a same identification number matching an identification number stored at the final winning location (1870 in fig.18, fig. 25, col. 30 lines 8-12).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 11-17 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Chao et al. (U.S. Patent No. 6,370,144 B1).

Regarding claim 11 and 15, Chao teaches an apparatus including: n traffic flow Queues (fig. 14), wherein n is greater than 0; a processing complex including at least one processor that enqueues packets on selected ones of the traffic flow queues (fig. 16); a memory with a search zone having a plurality of search locations with each search location including at least one indicator (validity bit) (fig. 16 and fig. 14); and a next packet search engine searches multiple levels where each level has m inputs wherein each one of the m inputs operatively coupled to an indicator within a group of indicators (fig. 15, 21 and 29); and generate a control signal identifying a location within said search zone (Fig. 25, col. 30 lines 8-12) .

Chao differs from the claimed invention in that chao does not specifically teach using p segment search engines (p is greater than 1) and a top search engine. However, it's well known in the art that multiple search engines can be used to provide faster search capabilities. Furthermore, it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co., 193 USPQ 8.*Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to include, p segment search engines, p is greater than 1, and each of said p segment search engine includes m inputs wherein each one of the m inputs operatively coupled to an indicator within a group of indicators; and a top search engine responsive to signals provided by the p

segment search engines to generate a control signal identifying a location within said search zone, to provide faster search capabilities.

Regarding claim 12, Chao further teaches including a first scheduler function that monitors the traffic flow queues and periodically attaches to a location in said search zone a characteristics of a traffic flow queue if a packet is placed in said traffic flow queue; and a second scheduler function responsive to the control signal to transmit a packet from a selected Flow Queue (fig. 16).

Regarding claim 13, Chao further teaches the apparatus including a plurality of target port Queues wherein one of said target port queues received the transmitted packet (col. 42, lines 13-16).

Regarding claim 14, Chao further teaches the characteristics includes the flow queue identification number (fig. 14 the F #).

Regarding claim 16, Chao further teaches each segment (level) includes m entries, wherein m is an even power of 2 (col. 22 lines 5-26).

Regarding claim 17, Chao further teaches further includes the step of correlating outputs from each segment search with a top search algorithm to select the winning location (step 1870 in fig. 18 and col. 30 lines 8-12).

Regarding claims 20 and 21, they claim a computer program product to carry out the method described in claim 18 and 19. Although method claims 18 and 19 are rejected under 102(e) as stated above, Chao does not specifically teach to use a computer program to carry the method. However, it is within the level of one skilled in the art to implement the logic/method as software or computer program instructions. It would have been obvious to one of ordinary skill at the time of the invention to store the computer program instructions on a computer readable medium so they are executable on a processor.

Allowable Subject Matter

5. Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lina Yang whose telephone number is (571)272-3151. The examiner can normally be reached on 7:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 517-273-8300..

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LY

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